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Street, Apt. 3, Brookline, MA 02246 (US). **DEMETRI, George, D.** [US/US]; 118 Salisbury Road, Brookline, MA 02445 (US).

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(74) Agent: **HARDING, Tanya, M.**; Klarquist Sparkman, LLP, One World Trade Center, Suite 1600, 121 SW Salmon Street, Portland, OR 97204 (US).

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(71) Applicants (*for all designated States except US*): **OREGON HEALTH & SCIENCE UNIVERSITY** [US/US]; Office of Technology & Research Collaborations, 2525 SW 1st Avenue, Suite #120, Portland, OR 97201 (US). **DANA-FARBER CANCER INSTITUTE** [US/US]; Office of Patent Counsel, 44 Binney Street, Boston, MA 02115 (US). **BRIGHAM AND WOMEN'S HOSPITAL** [US/US]; Corporated Sponsored Research and Licensing, 75 Francis Street, Boston, MA 02115 (US). **THE GOVERNMENT OF THE UNITED STATES d.b.a. THE DEPARTMENT OF VETERANS AFFAIRS** [US/US]; Office of the General Counsel, 810 Vermont Avenue N.W., Washington, DC 20420 (US).

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(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **HEINRICH, Michael, C.** [US/US]; 4649 Winthrop Court, Lake Oswego, OR 97035 (US). **CORLESS, Christopher, L.** [US/US]; 4904 SW Dosch Park Lane, Portland, OR 97201 (US). **FLETCHER, Jonathan, A.** [US/US]; 122 Pleasant

(54) Title: **ACTIVATING MUTATIONS OF PLATELET DERIVED GROWTH FACTOR RECEPTOR ALPHA (PDGFRA) AS DIAGNOSTIC MARKERS AND THERAPEUTIC TARGETS;**

(57) Abstract: This disclosure provides tyrosine kinase protein and nucleic acid variants, particularly PDGFRA variants, which are activating forms of these molecules and are linked to neoplasms and/or the development or progression of cancer. The disclosure further provides methods of diagnosis and prognosis, and development of new therapeutic agents using these molecules and fragments thereof, and kits for employing these methods and compositions.

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